4 ANSWER 13 OF 96 CAPLUS COPYRIGHT 2003 ACS
AN 2000:321782 CAPLUS
DN 133:282384
TI Synthesis of nonlinear optical maleimide **copolymer** by **polymer** reaction and its electro-optic properties
AU Park, Lee Soon; Kim, Sung-Jin; Choi, Soo Young; Kim, Gi-Heon
CS Department of Polymer Science, Kyungpook National University, Taegu, 702-701, S. Korea
SO Kongop Hwahak (2000), 11(2), 151-156
CODEN: KOHWE9; ISSN: 1225-0112
PB Korean Society of Industrial and Engineering Chemistry
DT Journal
LA Korean
CC 37-3 (Plastics Manufacture and Processing)
Section cross-reference(s): 73
AB Novel **polymers** which exhibit non-linear optical (NLO) properties have been synthesized and their electrooptical properties were examd. N-(4-Hydroxyphenyl)maleimide-.alpha.-methylstyrene **copolymer** (MSHM) and N-(4-carboxyphenyl)maleimide-.alpha.-methylstyrene **copolymer** (MSCM) were obtained readily by radical **polymn**. Etherification (94.3%) of MSHM and esterification (33.0%) of MSCM with C.I. **Disperse Red** 1 (DR) chromophore was conducted using the Mitsunobu reaction. The glass transition temp. of the NLO **polymers** was in the range of 185-217.degree.C. The electrooptical coeffs. (r33) were detd. with an exptl. setup capable of the real-time measurement while varying the poling field and temp. The NLO **polymer** MSHM-DR exhibited higher r33 values than MSCM-DR due to the increased substitution by the DR chromophores in the latter. MSHM-DR had a max. r33 value of 26 pm/V at 135 MV/m poling field with a 632.8 nm light source.
ST hydroxyphenylmaleimide methylstyrene **copolymer** etherification azo dye; carboxyphenylmaleimide methylstyrene **copolymer** esterification azo dye; methylstyrene maleimide deriv **polymer** NLO property; azo dye deriv NLO **polymer**
IT Electrooptical effect
(of azo dye-modified hydroxyphenyl- and carboxyphenylmaleimide **polymers**)
IT Nonlinear optical materials
(prepn. of azo dye-modified hydroxyphenyl- and carboxyphenylmaleimide **polymers**)
IT 2872-52-8, C.I. **Disperse Red** 1
RL: RCT (Reactant); RACT (Reactant or reagent)
(esterification of carboxyphenylmaleimide **polymer** with)
IT 2872-52-8DP, C.I. **Disperse Red** 1, ether with N-(4-hydroxyphenyl)maleimide-.alpha.-methylstyrene **copolymer**
152590-68-6DP, ether with C.I. **Disperse Red** 1
299433-78-6P, N-(4-Carboxyphenyl)maleimide-.alpha.-methylstyrene **copolymer ester** with C.I. **Disperse Red** 1
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and NLO properties of)
IT 299428-85-6P, N-(4-Carboxyphenyl)maleimide-.alpha.-methylstyrene **copolymer**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and esterification with C.I. **Disperse Red** 1 azo dye)
IT 152590-68-6P, N-(4-Hydroxyphenyl)maleimide-.alpha.-methylstyrene **copolymer**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and etherification with C.I. **Disperse Red** 1 azo dye)

film pyrosensors
dwig; Kaminorz, Yvette; Grasnick, Gerd; Herkner, Georg
solid State Physics, University Potsdam, Potsdam, D-14469,

olecular Symposia (1996), 102(9th Rolduc Polymer Meeting, Smart
ymer Materials & Products, 1995), 391-8
ODEN: MSYMEC; ISSN: 1022-1360
Huethig & Wepf
Journal
English
76-6 (Electric Phenomena)
Section cross-reference(s): 38

AB The pyroelec. response and pyroelec. relaxation were measured, of thin films of poled poly(vinyl alc.)-azobenzene side chain (PVA-Az) and of a polysiloxane. The poly(siloxane) is poly(dimethylsiloxane) with an **ester** of the **Disperse Red** 1 azo dye on the side chain (PS-Az). Measurements of both materials were carried out by a dynamic method with a frequency-modulated laser diode and by a static method. The PVA-Az has pyroelec. properties comparable to those of other pyroelec. materials and can be processed into thin films. The pyroelec. response of PS-Az undergoes a relatively quick decay at room temp. The pyroelec. response of PVA-Az can be controlled by applying d.c. voltage to the electrodes of a pyroelec. sensor, in the same direction as the poling voltage. Pyroelec. detectors with electrodes arranged in a lateral configuration and an auxiliary electrode which can also function as a radiation absorbing layer, were designed.

ST polyvinyl alc azobenzene pyroelec response; polysiloxane azo dye pyroelec response decay; sensor pyroelec film polyvinyl alc azobenzene

IT Electrooptical effect
(poling; pyroelec. response of PVA-azobenzene films and electrode configuration in pyroelec. sensor)

IT Pyroelectricity
(response; pyroelec. response of PVA-azobenzene films and electrode configuration in pyroelec. sensor)

IT Siloxanes and Silicones, properties
RL: PRP (Properties)
(stability of pyroelec. response of polysiloxane films with azo dye side group)

IT Pyroelectric substances
(thin-film materials; pyroelec. response of PVA-azobenzene films and electrode configuration in pyroelec. sensor)

IT 9002-89-5D, Poly(vinyl alcohol), azobenzene derivs. 142747-37-3D, 4'-n-Dodecyloxyazobenzene-4-carboxylic acid, PVA derivs.
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(pyroelec. response of PVA-azobenzene films and electrode configuration in pyroelec. sensor)

IT 2872-52-8D, **Disperse Red** 1, polysiloxane derivs.
9016-00-6D, Di-Me siloxane, SRU, azo dye **ester** derivs.
31900-57-9D, Dimethylsilanediol **homopolymer**, azo dye **ester** derivs.
RL: PRP (Properties)
(stability of pyroelec. response of polysiloxane films with azo dye side group)

ANSWER 3 OF 9 CAPLUS COPYRIGHT 2003 ACS
1999:559297 CAPLUS
132:167296
Application of new poly(malonic ester) with two symmetrical photoresponsive groups to erasable optical data storage media
Han, Yang-Kyoo; Na, Hai-Sub
Department of Chemistry, Hanyang University, Seoul, 133-791, S. Korea
Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (1999), 40(2), 1234
CODEN: ACPPAY; ISSN: 0032-3934
American Chemical Society, Division of Polymer Chemistry
Journal
English
38-3 (Plastics Fabrication and Uses)
Novel liq. cryst. malonic ester monomer with **disperse red** 1 was synthesized from malonyl dichloride and **disperse red**. Thew monomer was polymd. with 1,6-dibromohexane in the presence of sodium hydride to give new poly(malonic ester) with two sym. photosensitive groups in the side chain. The resulting polymer ia an excellent reversible optical information recording media for data storage and retrieval through a trans-cis isomerization of the azobenzene units by Ar laser irradn. and thermal process.
polymalonic ester photosensitive optical data storage
Heat treatment
Lasers
Optical recording
Photoelectric devices
(application of new poly(malonic ester) with two sym. photoresponsive groups to erasable optical data storage media)
141-82-2D, **Malonic acid**, ester, polymers 2872-52-8D, **Disperse Red** 1, polymers
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(application of new poly(malonic ester) with two sym. photoresponsive groups to erasable optical data storage media)

4 ANSWER 96 OF 96 INSPEC COPYRIGHT 2003 IEE
AN 1999:6384232 INSPEC DN A1999-23-4270J-001
TI Synthesis of new poly(malonic **ester**) containing **disperse red** 1 and its applications to optical data storage.
AU Yang-Kyoo Han; Hai-Sub Na (Dept. of Chem., Hanyang Univ., Seoul, South Korea); Cha-Hwan Oh
SO Molecular Crystals and Liquid Crystals (1999) vol.327, p.271-4. 3 refs.
Published by: Gordon & Breach
CODEN: MCLCE9 ISSN: 1058-725X
SICI: 1058-725X(1999)327L.271:SPME;1-K
Conference: Korea-Japan Joint Forum 1998. Sapporo, Japan, 30 June-1 July 1998
DT Conference Article; Journal
TC Experimental
CY Switzerland
LA English
AB New poly(malonic **ester**) with two symmetrical azobenzene groups was synthesized by the reaction of novel liquid crystalline malonic **ester** monomer with **disperse red** 1 with 1,6-dibromohexane. The resulting **polymer** was found to be excellent as reversible optical information recording media for data storage and retrieval through a trans-cis isomerization of the azobenzene units by Ar laser irradiation and thermal process.
CC A4270J Optical polymers and other organic optical materials; A4270D Liquid crystals (optical materials); A4280T Optical storage and retrieval
CT LIQUID CRYSTAL **POLYMERS**; OPTICAL **POLYMERS**; OPTICAL STORAGE
ST **poly(malonic ester)**; **disperse red 1**; optical data storage; symmetrical azobenzene groups; 1,6-dibromohexane; reversible optical information recording media; trans-cis isomerization; Ar laser irradiation
ET Ar